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RESEARCH PAPER

Certification of a Community-based Forest Enterprise for Improving Institutional Management and Household Income: A Case from Southeast Sulawesi, Indonesia

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Abstract Forest certification for community-based forest management was designed to strengthen an area's forestry functions while simultaneously alleviating poverty by developing the existing community forest. It is fundamental for forest certification to maintain the economic benefits for certified local sellers and balance conservation goals with increasing local incomes. This study explores how FSC certification of a community-based forest enterprise in Southeast Sulawesi in Indonesia could improve effectively field situations of community forest management and strengthen local peoples' financial benefits and social perceptions towards conserving forests. FSC group certification was introduced in the area of teak community forest of several villages in 2005. Because of local strong interest in group certification, the size of certified forests, the number of group certification members and the amount of certified wood harvested gradually increased. The support of a local NGO and an international NGO contributed towards successful establishment of group certification and establishment of a small-scale forestry enterprise producing certified wood in a sustainable manner. These NGOs played important roles in establishing strong relationships between producers and consumers, strengthening local forest management institutions, and promising social and economic benefits to the local people.

Keywords FSC · Group certification · Small-scale enterprise · Community forest · Community participation

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Introduction

Community forestry has attracted attention for its role in alleviating poverty while conserving forests. A vast number of community forestry programs have been implemented in many areas in developing countries. While several community forestry programs have been introduced in India, Nepal, Cambodia and the Philippines, these programs still have many challenges for more successful and sustainable forest management (Malla et al. 2003; Sunderlin 2006; Thoms 2006; McDermott and Schreckenberg 2009). The fundamental reasons for the failure of community forestry are the political complexity associated with it, the weakness of social institutions, and non-sustained economic incentives (Molnar et al. 2007).

Forest certification was initially developed as a non-governmental policy instrument aimed at tackling the problem of illegal logging, an issue that government authorities previously failed to curtail, and promoting sustainable forest management systems, particularly in developing countries (Bass et al. 2001; Nussbaum and Simula 2005). However, forest certification is used to not only combat illegal logging and forest clearance but also create economic and social opportunities (Markopoulos 2003; McDaniel 2003; Molnar 2003; Vallejo 2003; Humphries and Kainer 2006).

In comparison to the number of natural or planted forests, few community-based forest enterprises (CFEs) have been certified.[1] One of the main reasons is the difficulty CFEs face when seeking certification (Thornber and Markopoulos 2000; Bass et al. 2001; Molnar 2003; Butterfield et al. 2005; De Pourcq et al. 2009). A major problem is that a community is often unable to afford the auditing, assessment and implementation costs of certification. To tackle impediments to certification and to alleviate the adverse circumstances in which many small companies operate, the Forest Stewardship Council (FSC) group certification system was developed in 1998. This focuses on community-based forest management practiced in Small and Low-Intensity Managed Forests (SLIMF)[2], which have simpler procedures of assessment, monitoring and re-assessment, and lower costs, than those of a single of forest owner. Two hundred cases of group-certified forests covering 8 M ha, of which 4 M are in developing countries, were identified by Karmann et al. (2009).

Given that forest certification is a market-based conservation strategy, it must produce financial benefits. While higher prices may be ensured in forest certification, the community-based enterprises may compete with large-scale industrial enterprises to produce more certified timber and develop their presence in international timber markets. The benefits of certification in international markets include an incentive for community-based forest management (Bass et al. 2001; Markopoulos 2003). Forest certification for CFEs provides a variety of benefits to communities. Many studies have discussed how certification helps to improve labour conditions and employment, land tenure and livelihood rights including

[1] As of April 2011, 103 community-owned forests covering 5.1 M ha (<4 % of total certified forests in the world) were certified (FSC (2011). The Programme for the Endorsement of Forest Certification (PEFC) also targeted small forest owners. Hundreds of thousands of small forest owners including owners of family and community-owned forests have acquired PEFC certification (PEFC 2012).

[2] Details of SLIMF are provided by Nussbaum and Simula (2005).

access to forest resources, and provides financial support (Molnar 2003; Tikina et al. 2010). These benefits are strongly promoted in the concepts of community forestry (Nawir 2007; McDermott and Schreckenberg 2009). Community forestry is also expected to provide financial benefits to local communities (Pangdee et al. 2006; Sunderlin 2006; McDermott and Schreckenberg 2009; Maryudi et al. 2012). Forest certification for communities can help to meet such expectations, by adding a premium to the value of their timber.

In Indonesia, there exist two types of forest certification for community-based forest management, each of which has unique criteria and indicators (Muhtaman 2006; Maryudi 2009). One is Lembaga Ekolabel Indonesia or Indonesian Ecolabelling Institute (LEI)[3] *Pengelolaan Hutan Bersama Masyarakat Lestari* (PHBML) or the Sustainable Community-based Forest Management System. This certification scheme is in the initial stages in terms of having an immature chain of custody (CoC) system for certified timber (Scheyvens et al. 2007; Takahashi 2008; Harada et al. 2012). The other is FSC group certification with the SLIMF which exists in Java and Southeast Sulawesi. Little is known about how local farming groups promote forest certification in target villages or motivate local participation in the certification program (Barr 2007). While many existing Indonesian community forestry programs have achieved limited benefits (Bennett 1999; Campbell 2002), forest certification is expected to lead to more successful community forestry.

This study investigates how FSC group certification can improve situations of community forest management while using forests in a sustainable manner, in the South Konawe district in Southeast Sulawesi, and draws implications for better community forestry in developing countries. The research objectives have been: (1) to assess how post-certification activities as a whole, including member regulations and producing certified wood, affect local communities; and (2) to analyze specific cases to evaluate how local people have been encouraged to accommodate certification for developing their community forest.

The Study Site and Group Certification Experience

The study site is the area of FSC group certification in South Konawe district of the Southeast Sulawesi Province. The district is located at 3°58.66′–4°31.52′ south latitude and 121°58–123°16′ east latitude, and is a 1.5 h car drive from the provincial capital, Kendari. The district's total land area is 451,421 ha, which covers 11.8 % of the Province (BPS 2008). Of this, 38.9 % is state forest, and the balance agricultural land, including paddy fields, home gardens, grasslands and swamps. In 2007, the district population was 237,918, of which 72.4 % were farmers. The average population density was 52.71 persons/km^2. At the time, there were 22 sub-districts containing 293 villages.

[3] LEI was established in 1998 as an independent forest certification system, which has eight criteria and 32 indicators associated with timber production and ecological and social functions.

When the Suharto era collapsed in 1998, illegal logging in the South Konawe district—implemented by outside operators—began to damage the teak forests planted by the Indonesian Ministry of Forestry.[4] Between 2002 and 2004, many residents also engaged in a variety of illegal activities, including cutting trees and extracting and sawing logs to obtain more money than from farming.

While state forests were severely damaged in almost all areas in Indonesia during the Reformation era (1999–2004), it was not until 2003 that the Ministry of Forestry implemented social forestry programs aimed at sustaining state forests by curtailing illegal logging and increasing community welfare.[5] The local government of South Konawe encouraged 46 surrounding villages to participate in the social forestry programs. The total targeted area for the programs was 38,959 ha, comprising 24,538 ha of planted teak forests and the remainder of bare land (Dinas Kehutanan Propinsi Sulawesi Tenggara 2005a, b; JAUH 2006). The majority of participants were previously engaged in illegal activities. Locals awaited licenses for totally managing the planted state-owned teak forests. At the same time, they managed their teak forests. FSC group certification was granted for these community-owned forests.[6]

The Forest Network (*Jaringan Untuk Hutan* or JAUH), a local NGO, played a role in encouraging locals to acquire certification of the community-owned forest. JAUH encouraged communities in the 46 villages, which are the same villages targeted for implementing the social forestry programs, to organize social forest groups. The cooperative for sustainable forests (*Koperasi Hutan Jaya Lestari* or KHJL) was also established.[7] KHJL guided locals in the process of acquiring licenses to manage state forests, and worked to increase the production of timber and encourage a sense of belonging between locals.

The Tropical Forest Trust (TFT), an international NGO, drew attention to the high quality of state teak timbers, suitable for export to European countries. TFT attempted to manage state-owned teak forests in collaboration with JAUH and KHJL. In June 2004, while the government retained the right to manage the state forests and had not yet considered giving the right to local people, activities for acquiring group certification for the community forestry began. In that year, TFT

[4] In 1969, the local government in Southeast Sulawesi intensively designed and implemented a policy to plant teak trees. Forest rehabilitation programs were implemented until 1982, at which time teak forests covered 8,796 ha. In 1989, the Ministry of Forestry implemented the Industrial Plantation Forest Program (*Hutan Tanaman Industri*, HTI) for planting teak trees in state forests, and by 2002 teak forests covered 24,538 ha (Dinas Kehutanan Propinsi Sulawesi Tenggara 2005a; JAUH 2006).

[5] The program covered three management aspects: area, institutional management and business management (Dinas Kehutanan Propinsi Sulawesi Tenggara 2005a). Area management refers to the efforts by groups of forest growers to plan, implement changes, and monitor and evaluate specific forest areas. Institutional management refers to efforts by these groups to establish and abide by internal rules and manage institutional programs. Business management consists of efforts by the groups to enhance the welfare and financial stability of village residents.

[6] This FSC group certification is the first granted to community forestry in Indonesia. Recently, FSC group certification has been developed in Java. For example, in FSC group certification in Gunung Kidul district in Java, a forest enterprise has been making efforts to develop sustainable teak community forest management (Djamhuri 2008; Fujiwara et al. 2011; Maryudi et al. 2012).

[7] KHJL comprises a chairman, vice chairman, secretary, vice secretary, treasurer, and managers of business units.

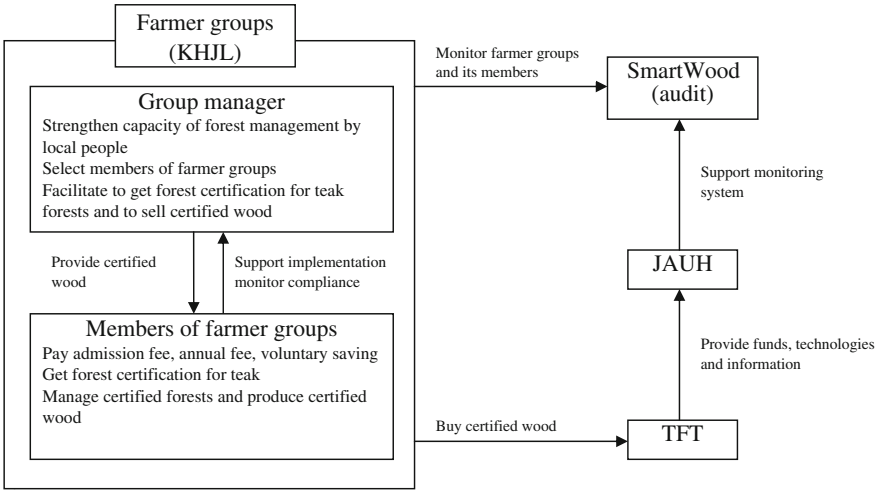

Fig. 1 Relationships among actors in group certification

signed a Memorandum of Understanding (MoU) with KHJL, which aimed at improving community forest management according to FSC standards. TFT also signed a MoU with JAUH. TFT completely supported KHJL's forest management technologies and cost for acquiring forest certification. In contrast, JAUH supported strengthening farmers' cooperation and assisted KHJL to establish good relationships with local governments. After the MoUs were signed, technical and administrative preparations commenced aimed at complying with FSC group certification, such as setting procedures and introducing the certification system to interested communities.

Activities carried out by TFT, JAUH and KHJL with local people included: (1) introducing community forest certification programs to communities in 12 villages; (2) registering new members possessing teak forests; (3) organizing forest management training for KHJL staff; (4) creating community forest maps; (5) arranging an inventory of standing teak stocks; and (6) arranging documents necessary for acquiring certification. KHJL prepared for acquiring certification by: (1) making financial regulations for managing certified wood; (2) making standard operation procedures including membership, finance, forest inventory, monitoring, cutting trees and sawmill operation; and (3) preparing the management plan. In February 2005, TFT submitted KHJL certification documents to the certification body, SmartWood. The initial cost for obtaining certification was US$14,000 and this was totally covered by TFT. The relationships between the various actors are illustrated in Fig. 1.

Research Method

The research was targeted to 21 villages included in FSC group certification. The 21 villages were categorized into two groups according to whether they were involved

in illegal logging activities in state forests. The former villages were generally close to the state forests and the latter far from state forests.

A qualitative survey with open-ended questions to government and local NGO staff was conducted to understand the institutional management of FSC group certification in the whole target area. The fundamental data—on post-certification activities including certified wood products, membership of forest certification and management of certified community forest and positive impacts of forest certification on local communities—was collected through informal interviews.

A quantitative survey with in-depth formal interviews was conducted in two villages selected from the 21 villages. The selection of the two villages was based on the group category, one being highly involved in the illegal logging activities and the other not involved. Preliminary interviews with open-ended questions were conducted in the selected two villages in July 2008. Stratified random sampling was applied for selecting households for close-ended questions in November and December 2008. Households were selected regardless of whether they were members of a farmer group of FSC group certification. Thirty members and 15 non-members of a farmer group were selected in each village. The questionnaire consisted of two sections, covering motivation to participate in the certification program and positive impacts of the program, and positive activities of local people for forest certification and forest conservation after obtaining certification.

Post-Certification Activities

This section identifies post-certification activities in the villages, including membership of KHJL and certified community forest and the process for producing certified wood, and examines the positive impacts of the certification on local communities.

KHJL Membership and Certified Community Forest

All farmer groups in each village became candidates for the FSC group certification. Initially, 12 villages were targeted, but this number gradually increased to 21 by 2008. KHJL is in fact considering including all 46 villages targeted for the social forest program for producing more certified wood in the future. However, not all farmers in each farmer group can become KHJL members. Those who want membership and certified forests must meet several requirements, as set out in Fig. 1. These include:

1. they must possess teak forests of at least 0.25 ha. There is no rule regarding the minimum number of teak seedlings. However, this KHJL regulation was modified in May 2005. Currently, farmers do not necessarily need to have teak forests, but at least they have to have land to plant teak seedlings.[8]

[8] The reason for changing the regulation is KHJL's desire to increase the production of certified wood.

2. they must possess land tenure certificates. This regulation follows Principle 3 of the FSC Principles and Criteria, which requires the following:
a. a Certificate of Land Ownership (*sertifikat tanah milik*) granted by the National Body of Land Affairs (Badan Pertanahan Nasional, BPN);
b. a Letter of Acknowledgement of Land Ownership (*girik*) granted by the village office;
c. a Letter of Land Ownership (SKK) granted by the head of the village; and
d. a Letter of Tax Notification (SPPT) granted by the tax office.
3. they must pay main savings (Rp. 12,000), obligatory savings (Rp. 12,000 annually) and voluntary savings to KHJL for forest management services.

Although farmers may become KHJL members, a member's teak forest is not automatically certified. Members must follow specific procedures, including taking an inventory of standing teak stocks and creating forest maps. Subsequently, each forest land parcel is evaluated by KHJL to determine whether it satisfies certification requirements.

In 2004, the number of KHJL members was only 194 from 12 villages. However, by 2008, the membership had increased to 556 individuals from 21 villages, which implies that an average of 14.5 % of members in 21 villages are affiliated with KHJL.

Certified land consisted of 801 units comprising 609 ha. The average certified number of land units and area per member were 1.4 and 1.1 ha, respectively. Although the proportion of certified forests was only 1.3 %, there were large differences between villages: the largest village had 11.2 %, and the smallest had 0.06 %. In 2008, the number of teak stands and the volume of KHJL-managed community forest in the targeted 21 villages were 1,860 trees and 678.5 m^3 respectively. Thus, although only a small proportion of teak forest currently has forest certification, it is possible that the proportion will increase in the future because of the high potential of teak forest and local peoples' willingness to participate in KHJL activities.

Process for Producing Certified Wood

The KHJL rules for managing teak forests state that only teak trees more than 30 cm in diameter can be cut, and limit the amount of Annual Allowable Cut (AAC). Cutting procedures include the following:

1. KHJL lists the total AAC amount for all farmer groups. This list is sent to each farmer group, and is used to determine the number of tree cut for each group.
2. Each group holds a meeting to determine which farmers are willing to cut their own teak trees and the targeted forest area for cutting in accordance with the KHJL ACC list. The list is then sent to KHJL.
3. KHJL establishes a harvest schedule for forests based on the groups' lists.

Targeted teak trees are cut according to the annual plan. Logged certified trees are felled and cut into square logs. They are then carried to the roadside, collected by KHJL trucks and transported to timber yards. Finally, container trucks prepared

Table 1 Volume of certified wood harvested

Years	Number of villages	Timber volume harvested (m^3)
2005	6	339
2006	12	606
2007	5	769

Source: BPS (2008) and KHJL (2008a, b)

Table 2 Sales value of harvested certified wood sold

Sales value of certified wood	2005	2006	2007	2008
Number of logs	2,781	4,510	3,792	4,992
Timber volume (m^3)	133	228	203	244
Number of companies which purchased certified wood	1	3	3	3
Total sales value (million rupiahs)	397	1,031	1,039	887

by companies carry the logs to a harbour in Kendari city, the capital of Southeast Sulawesi, from where they were exported.

The total volume of harvested certified teak wood has increased annually (Table 1). The total volume of certified wood sold increased gradually (Table 2). The total value of wood harvested reached about 1 billion rupiahs. By 2008, six companies in Central and East Java purchased harvested wood.[9]

Positive Impacts of the Forest Certification System on Local Communities

The greatest advantage of certification on local communities is its economic impact and the receipt of dividends (*Sisa Hasil Usaha*, SHU). Table 3 shows the sharing of costs of timber extraction and transportation among growers, KHJL and timber buyers. The main difference in certified and non-certified wood is whether a prepaid system can be applied before cutting certified trees. Members could earn income from non-certified forests after selling timber. In contrast, when selling certified wood, local farmers could receive a 60 % advance payment of the total payment from KHJL, with the remaining 40 % paid after selling certified wood. The pre-payment system could alleviate local farmers' burdens because they do not need to prepare financially in advance to complete the series of activities. Differences in the contribution of costs for carrying the wood from the roadside (timber yard 1) to timber yards (timber yard 2) were also observed between non-certified and certified wood. Although the costs for transporting certified wood from roadside to timber yard are shared equally by growers and KHJL, the costs for transporting non-certified wood are paid by buyers.[10] KHJL had some funding to support members

[9] The marketing unit of KHJL plays a major role in facilitating the sale of certified wood, obtaining prices higher than those received in public markets. It also encourages the creation of land maps, inventories of planned harvests, harvesting of certified trees, marketing of certified wood, and replanting of seedlings after harvest.

[10] Although local people cover the cost of transporting certified wood, they nevertheless choose to sell their own wood as certified because the cost of this transportation is lower due to the short distance, and the price of selling wood as certified is much higher.

Table 3 Sharing of costs of timber extraction and transportation

Category of wood	Cutting trees in forests	Transporting from forests to timber yard 1	Transporting from timber yard 1 to timber yard 2	Transporting from timber yard 2 to harbour
Certified wood	Owner pays 100 % (pre-payment with 60 % by KHJL)	Owner pays 100 %	Owner and KHJL pay 50 %, respectively	KHJL pays 100 %
Non-certified wood	Owner pays 100 %	Owner pays 100 %	Buyer pays 100 %	Buyer pays 100 %

Timber yard 1 is located on the side of roads and timber yard 2 is a place owned by KHJL (certified wood) or company (non-certified wood)

financially through this pre-payment system and transporting wood. When the funding is not sufficient, they borrow money from TFT.[11] The selling price of teak wood from community forests before the establishment of KHJL was Rp. 400,000–500,000/m^3 (Rp. 7,100–11,800/US$) between 2000 and 2004, and Rp. 700,000–800,000/m^3 (Rp. 9,300–21,400/US$) by 2008, but KHJL bought certified teak wood of 15–19 cm diameter at Rp. 1,750,000 and wood of more than 20 cm diameter at Rp. 2,000,000 in 2008. Thus, local people had some advantages in becoming members of KHJL certification-related activities.

Koperasi Hutan Jaya Lestari members could also receive dividends (SHU) for cooperating in the business of selling certified wood. KHJL determined the proportion of the distribution of the income: cooperative deposit (40 %), members (30 %), management of KHJL (10 %), employees of KHJL (5 %), cooperative education including staff training (5 %), social support, such as paying for children's education (5 %), and local development (5 %). The amount of SHU has increased gradually from Rp. 32,553,712 in 2005, to Rp. 116,766,590 in 2006, and Rp. 200,931,200 in 2007 (KHJL 2005, 2006, 2007). The distribution of SHU for each member was based on their amount of obligatory and voluntary savings. The more the member allocates to voluntary savings, the more income they receive. Each member could only receive a small amount of dividends. However, this additional income could increase incentives to manage forests sustainably. The SHU system has also provided incentives for non-members to join KHJL. Thus, forest certification could provide economic benefits for local people.[12]

Cases of Two Villages Involved in FSC Group Certification

This section analyzes how local people were motivated to participate in forest certification programs, what types of economic and social impacts their participation caused, and how locals perceived certification and conservation.

[11] KHJL has to pay the cost of every year's assessment at an amount of Rp. 17,000,000–20,000,000. In the event of a lack of funding, KHJL borrows money from TFT.

[12] In addition to harvesting and selling certified wood, KHJL established a credit union with a microfinance system to help KHJL members. The members can borrow money for personal necessities using their trees as security. The union's first capital consisted of Rp. 87.4 M derived from members, TFT and the local government.

Table 4 Land area used for KHJL certification programs

Status of land area	V1		V2		Total	
	Member	Non-member	Member	Non-member	Member	Non-member
Land area (ha/person)	3.07	2.97	3.14	2.39	3.11	2.68
Land area included in KHJL certification site (ha/person)	1.10	–	1.57	–	1.34	–
Proportion of land area included in KHJL program (%)	36	–	50	–	43	–

Demographic Characteristics of Two Selected Villages

Village 1 (V1), which lies only 3 km from state forests, belongs to the Laeya sub-district and has a total area of 52 km^2. Its population comprises 483 individuals in 112 households. Previously, most village inhabitants engaged in illegal logging activities. Now 42 individuals are members of the KHJL, constituting 37 % of the population. About 36 % of the village's land is involved in certification. In Village 2 (V2), which lies about 10 km from state forests, residents participated in illegal logging. V2 belongs to the Lainea sub-district and has a total area of 39 km^2. Its population is 421 people in 115 households. Thirty-three individuals are members of KHJL, constituting 28 % of the population. About 50 % of the village's land is involved in certification.

Table 4 shows the land area used for KHJL certification programs. In V2, members had more land than non-members, whereas in V1 members and non-members had similar areas. The proportion of KHJL members did not differ significantly between the two villages.

Motivation to Participate in KHJL Certification Program and Positive Impacts

Respondents were asked to choose the three statements of the economic and social motivation most important to them (Table 5). The higher price for selling certified teak wood, aid for teak seedlings, and dividends were the primary economic motivations. About 67 % of members in V1 and 83 % in V2 stated the advantage of acquiring higher prices for selling certified wood. The price of teak wood before the establishment of KHJL (2000–2004) was approximately Rp. 400,000–500,000/m^3 (Rp. 7,000–12,000/US$ between 2000 and 2004) in markets. In 2008, the price of teak wood from community forests in public markets was Rp. 700,000–800,000/m^3 (Rp. 9,000–9,500/US$ on average in 2008). KHJL could subsequently sell certified wood in markets at a higher price around 2008 as shown in Table 6.

About 73 % of the members in V1 and 77 % in V2 chose aid from provision of teak seedlings as their motivation. KHJL provided each member teak seeds at an amount of 1.5 kg annually and encouraged them to plant 10 teak seeds for each felled tree. Forty-three percent of the members in V1 and 27 % in V2 chose dividends as their top motivation. The members who paid obligatory and voluntary savings had rights to receive dividends depending on the amount they paid.

Table 5 Motivation to become the members of KHJL

Motivation	V1 (%)	V2 (%)	Total (%)
Economic motivation			
(1) Higher price for selling certified wood	67	83	75
(2) Aid of teak seedling	73	77	75
(3) Aid of public welfare	7	0	3
(4) Dividend (SHU)	43	27	35
(5) Salary as KHJL member	0	0	0
(6) Commission from production service of KHJL	0	3	2
(7) Loan for cattle	7	0	3
(8) Loan from credit union	0	20	10
(9) Additional income for carrying cut trees	17	0	8
Social motivation			
(10) A feeling of security in managing certified wood	43	83	63
(11) Knowledge of community forest management and cooperation	33	7	20
(12) Technology of community forest management and cooperation	0	0	0

Respondents were expected to choose three from 12 motivations

Table 6 KHJL's selling price of wood

Log diameter (cm)	Certified wood price (1,000 rupiahs/m^3)	Non-certified wood price (1,000 rupiahs/m^3)
15–19	1,750	900
>20	2,000	1,200–1,500

1US$ = Rp. 9,000–9,500 on average in 2008, and 1US$ = Rp. 9,500–12,500 from the end of 2008 through 2009

About 43 % of the members in V1 and 83 % in V2 chose security in managing certified wood as their social motivation. Before the establishment of KHJL, local governments, including police and forest rangers, suspected that local people illegally harvested teak wood from state forests. This situation made locals uncomfortable and apprehensive about selling their own teak wood. Currently, however, the locals feel secure in selling wood because certification provides evidence that the wood is harvested legally. About 33 % of the members in V1 and 7 % in V2 chose knowledge of community forest management and cooperation as their motivation. KHJL often held meetings regarding forest institutions, the benefits of forests, techniques of community forest management and the market mechanisms of certified wood. These activities began after forest certification was introduced.

The proportion of people who chose a feeling of security in managing certified wood as their motivation was greater in V2 than in V1. It is possible that people in V2 gained a sense of security from government officers and police through their involvement in the KHJL certification program. In contrast, four times as many people in V1 noted knowledge of community forest management and cooperation as

Table 7 Income from KHJL and non-KHJL activities

Type of income	V1		V2	
	Member	Non-member	Member	Non-member
Income from KHJL activities (%)				
Selling certified wood	10.0	–	14.6	–
Dividend	0.1	–	0.2	–
Fee of production service	3.0	–	1.1	–
Salary for management	1.8	–	0	–
Loan	1.2	–	–	–
Total	16.1	–	17.4	–
Total income (1,000 rupiahs)	2,631		3,070	
Income from non-KHJL activities (%)				
Selling non-certified wood	10.4	8.3	2.3	13.0
Agriculture (rice, cashew nuts, vegetables)	10.4	38.1	24.2	34.2
Cattle (buffalo, sheep, chicken)	18.7	2.1	2.5	0.7
Salary (employee, carpenter)	36.0	23.0	45.0	39.8
Business (taxi/bike driver, enterpreneur)	3.7	12.6	5.4	7.5
Loan (from bank, neighbour, other institutions)	2.0	0	0	0
Aid (government, family, neighbour)	2.7	15.9	3.2	4.8
Total	83.9	100	82.6	100
Total income (1,000 rupiahs)	13,722	7,030	14,617	11,584
Total income (1,000 rupiahs)	16,353	7,030	17,687	11,584

an advantage of introducing certification. This result implies that the need for knowledge of community forest management to recover community forests was highly recognized in V1.

The income of local people was also calculated to determine the benefits of certification-related activities (Table 7). The direct economic impact of introducing forest certification in local communities was identified by calculating the annual income of both villages. The income of members was higher than that of non-members in both villages because of income from KHJL activities. Members earned more than non-members because they could obtain additional income from KHJL activities, the shares of the total income in V1 and V2 being 16.1 and 17.4 %, respectively. Among the income, the proportion of the total income from selling certified wood was significant in both villages: 10.0 % in V1 and 14.6 % in V2. Thus, KHJL activities increased members' income.

Positive Activities of Local People for Forest Certification and Forest Conservation

Table 8 shows the positive activities of local people in forest certification and forest conservation. Most members and non-members of KHJL planted teak seedlings. In particular, all members in both V1 and V2 planted seedlings.

Table 8 Positive activities of local people for conserving teak forests

Teak seedling source and planting activity	V1		V2	
	Member	Non-member	Member	Non-member
Number of people who have planted teak seedlings (%)	100	87	100	83
Number of teak seedlings planted per household	1,216	103	576	70
Area of community forest land in which teak seedlings were planted (ha)	0.92	0.73	0.78	0.49
Number of people obtained teak seedlings from the following sources (%)				
KHJL	90	0	100	0
Government	30	47	0	0
Individual	70	87	60	80

KHJL members planted more seedlings than non-members in both villages, revealing that members were enthusiastic about developing a community forest by planting teak trees because they recognized fully the value of teak wood as certified. In contrast, the area of community forest land in which teak seedlings were planted did not differ significantly between members and non-members. Although nearly all members obtained seedlings from KHJL, most also grew seedlings independently, especially the non-members.

Discussion and Conclusions

Based on the research results, the successful factors in group forest certification were identified by focusing on two points: strengthening social institutions for managing certified forests and strategies of forest certification for CFEs to survive in international markets. Finally, the policy implications of global forest certification systems for CFEs were discussed.

How Social Institutions were Strengthened for Managing Certified Forests

This study demonstrated that local people had positive attitudes toward forest certification because it provides social and economic benefits. Several factors caused forest certification to be successfully adapted into existing forest management. First, the KHJL farmer groups, which were stronger than the existing local groups, increased local awareness about certification by providing social and economic incentives for local people. The results of the case study in Tables 7 and 8 showed that members of KHJL tended to increase their income and to implement positive activities to conserve teak forests. Previous studies argued that the costs of the auditing process, assessment and implementation hindered certification for community forestry (e.g. Thornber and Markopoulos 2000; Butterfield et al. 2005; De Pourcq et al. 2009). Although the cost of the auditing process and assessment should be paid by KHJL in this case, the initial cost was covered by TFT and a local

NGO, JAUH, for which members did not have to pay. KHJL, a farmers' cooperative, also played a major role in managing and obtaining funding for managing, producing and buying certified wood from members. Local people could easily sell certified wood due to the pre-payment system organized by KHJL. Given the capacities of KHJL, farmers could comfortably sell their wood as certified and obtain higher prices. Therefore, both non-members and members enthusiastically planted teak seedlings in their community forest land to become members of farmer groups and sell their harvested wood as certified. The system, in which only selected people could become members of the group and sell harvested woods as certified, established an environment in which the villagers could learn from one another.

The activity of a third party in linking local people with an international market was also a key factor in the success of certification, especially the establishment of a strong link between consumers and producers. Wollenberg (1999) stated that a critical issue for local communities attempting to earn income by selling harvested forest products is to link local livelihoods with markets. Establishing a strong relationship with an international, environmental NGO could provide benefits to local communities (Eba'a Atyi and Simula 2002).

The case introduced here is a successful demonstration that national NGOs, an international NGO and community organizations can develop a collaborative network with strong initiatives and can strengthen existing community forestry. Before the introduction of group certification in the study area, local people were compliant with middlemen to sell wood. However, locals looked to the future and could easily sell certified wood with strong support from TFT in international markets. TFT supported local communities economically and technically, and farmer groups strengthened local empowerment and did not confront major problems, leading to successful certified forest management.

How Forest Certification of CFEs Can Survive in International Markets

Although certified forest management has been implemented in local fields, the activities have a direct link to the trade of certified wood, hence the value of certified wood is influenced by the international market. A fundamental issue is how certified wood can attract consumers in developed countries.

It is a challenge to determine how community enterprises should provide the quality and quantity of certified wood demanded by markets (Molnar 2003; Karmann et al. 2009). In particular, it is unclear how small-scale CFEs can counter large-scale industry enterprises with vast forests, large budgets, and extensive human resources. Although the case of Southeast Sulawesi introduced here supports the established certification system and demonstrates potential areas for development and local peoples' willingness to be included in these activities as members, the area for producing certified wood is limited. Regarding the case of FSC group certification in Indonesia, there are three locations in Java—Gunung Kidul district, Kulon Progo district and Kebumen district—that can produce certified wood through community-based forest management. Telapak, an Indonesian local NGO that supports the Southeast Sulawesi case through JAUL, has been expanding certified forests in areas in addition to these three locations. The number and the

area of certified forests will gradually increase. To further develop certification systems for CFEs, the role of a third party such as Telapak must be closely examined.

In the debate about the principles of forest certification (specifically, their fundamental purpose), CFEs cannot easily compete against large-scale industry enterprises in the amount of certified wood they produce. As stated in Principle 4 of the FSC Principles and Criteria, the mission of certification for CFEs is to maintain or enhance the long-term social and economic well-being of forest workers and local communities and to respect their rights. Some studies have reported that forest certification for natural and planted forests actually has negative social effects (e.g. WALHI et al. 2003). However, forest certification should not establish a tradeoff situation in which the improvement of local livelihoods or sustainable forest management is exclusive. Conserving forests, strengthening relationships among local villagers during the process of obtaining certification, building local self-confidence through forest management, improving local livelihoods and selling certified timber comfortably, can be accomplished through CFE certification. Such situations could differentiate certified CFEs from large-scale industry enterprises the main objective of which is to produce certified wood on a commercial basis. Nonetheless, the previous discussion about certification as a market-oriented mechanism raises the challenge of how certified wood from community forests can be selected by consumers in international markets. Several examples of organized community-based timber producers in developing countries have been identified to have clear advantages in their communities' ability to secure better deals on their products (Macqueen 2008).

A new approach to applying the concepts of fair trade in forest certification has recently been promoted in collaboration between FSC and Fairtrade Labelling Organization (FLO) (Taylor 2005; Macqueen 2008). In 2009, FSC began implementing dual Forest Stewardship Council-Fairtrade Labelling Organization (FSC-FLO) certification projects. Their purpose has been to explore the potential role of fair trade in creating market opportunities for community-based forest management and the possibility of finding a way to further benefit forest-dependent communities and improve their access to markets (Karmann et al. 2009). The new trend of forest certification may increase the value of community-based forest management by incorporating the advantages of FLO fair trade in international markets.

This study reveals that FSC group certification in Southeast Sulawesi could improve local incomes and social attitudes and could strengthen farmer groups to manage existing community forests more effectively. However, certification has challenges, such as maintaining the certified forest management system in a sustainable manner and strengthening the beneficial link between farmer groups and consumers in choosing certified wood from CFEs in developed countries. To overcome these challenges, it is necessary to have stronger support from outside institutions, such as national and international NGOs in developed countries. This case has possible limitations in that both local and central governments were not involved in the management of the certification. The Indonesian timber trade has been completely under the control of the government, as observed in the recent new

policy that all exported processing timber should be examined and guaranteed to be legally harvested. The forest certification system may lose its value in the future if Indonesian national and local governments are not enthusiastic about supporting the system. Moreover, given that a large proportion of community forestry in state-owned forests is under government management and community forests face many obstacles, such as complicated regulations and limited support for local people in Indonesia, it is essential for certification stakeholders to have strong collaborative relationships with the governments to expand the area of the forest certification for community forestry.

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